

XVII. *On the Genus Mæchidius of Mac Leay.* By J. O. WESTWOOD, F.L.S., &c.

[Read September, 1841.]

MÆCHIDIUS is one of those singular forms which disturb the pre-conceived arrangements of professed systematists, and of which New Holland affords such numberless examples. Mr. Kirby, who first described the insect, which served as the type of the genus, observed respecting it, that he could not clearly ascertain whether it belonged to *Trox* or *Melolontha*. He accordingly described it under the name of *Trox spurius* (Linn. Trans. xii. p. 462). Mr. W. S. Mac Leay subsequently proposed for it the generic name of *Mæchidius*, considering it rather as nearer to *Trox*, and giving a detailed description of its oral structure, accompanied by outline figures of the essential parts from the pencil of Mr. Curtis (Horæ Ent. i. p. 140, tab. 2, fig. 15). Since the publication of that work no addition has been made to our knowledge of the genus, and from the rarity of the insect, which does not appear to exist in any of the continental collections, but few Entomologists are acquainted with it, no figure of the entire insect having yet been published.

Two species of this genus, recently added by the Rev. F. W. Hope to his collection, and a fourth in my own collection, have rendered necessary a more precise specific description of the typical species, whilst at the same time the opportunity of figuring so interesting a genus will, I am sure, be appreciated by the student.

The parts of the mouth present several peculiarities of structure, which require a more detailed description than has been given of them. The clypeus has the lateral and anterior margins reflexed, the front being emarginate; beneath we perceive the part which Mr. Mac Leay terms the labrum, but which is certainly not articulated to the clypeus, although there is transverse impression, which seems to indicate that the clypeus and labrum are confluent. This supposed labrum is emarginate at its extremity, and meets the anterior margin of the mentum in order to close the mouth. The mandibles are horny, short, trigonate, the outer margin rounded, and the apex entire. On the side next the labrum the mandibles are smooth and highly polished, but beneath they are furnished with two strong elevated ridges, forming an oblique canal, which causes them to appear furnished with two

short teeth at the inner margin, when seen obliquely; beneath the middle of the mandible arises an elongated slender membrane, and the internal basal angles are much produced, but there is no transversely striated molar plate. The mentum and maxillæ closely unite to form the underside of the mouth, the lobes of the latter and the labrum not being produced more forward than the front margin of the mentum. The outer lobe of the maxillæ is horny and 5-toothed; the inner division of the maxillæ is distinct, although small and horny; the inner lobe, arising from its extremity, small, membranous and ciliated. The mentum has the sides straight, but not parallel, the front margin being wider than the base, and almost straight; the labial palpi arise within, close to the anterior angles of the mentum, the tip of the second joint, and the short third joint, being only visible. Within the mouth, between the mandibles and the supposed labrum, I observed, in two specimens I dissected, a membranous piece which appears to me to be analogous to the membranous labrum of the *Scarabæidæ*. The two spurs of the middle tibiæ are acute, but the two at the extremity of the hind tibiæ are obtuse and flat; the fore tibiæ are obtusely tridentate on the outer margin, and the outer extremity of the two posterior tibiæ is produced into a thick diverging spur; all the ungues are simple and entire.

On reviewing these characters with reference to the group to which the genus naturally belongs, I see no grounds for regarding it as Trogideous, whilst its relation to the *Mcclolonthidæ* appears far stronger. This is more especially the case if Mr. Mac Leay be correct in the nomenclature of the part he terms labrum. It may appear strange that any doubt can exist as to whether a Lamellicorn beetle is Thalerophagous or Saprothagous;* but the fact is,

* By comparing the characters of *Machidius* with those of these two groups, as given by Mac Leay (*Horæ Ent.* i. pp. 68, 69) we shall perceive that the genus accords even better with the *Thalerophaga* than with the *Saprothaga*.

SAPROPHAGA.	MÆCHIDIUS.	THALEROPHAGA.
Antennæ 8- to 11-jointed.	Antennæ 9-jointed.	Antennæ 9- to 10-jointed.
Clava short, thick, 3-jointed.	Clava rather elongate, 3-jointed.	Clava rather elongate, often more than 3-jointed.
Feet always robust.	Feet rather slender	Feet less robust.
Tibiæ broad.	Tibiæ narrow.	Tibiæ rather narrow.
Ungues undivided.	Ungues undivided.	Ungues often divided.
Colour lurid or black.	Colour lurid.	Colour gay metallic.
Elytra generally extending to the anus.	Elytra not covering the anus.	Elytra rarely covering the anus.

I omit the nature of the food, because we are ignorant of that of *Machidius*.

that in these osculant genera, of whose habits nothing is known, we meet with a combination of characters which set all our divisions at nought. Looking at the structure of the maxillæ, we should expect the same habits as we find in *Melolontha*, but there is no molar plate for masticating leaves in the mandibles.

The following opposed characters of the *Trogidæ*, *Melolonthidæ*, and *Mæchidius*, will, I think, clearly prove that the genus in question belongs to the *Melolonthidæ*, and not to the *Trogidæ*.

TROGIDÆ.	MÆCHIDIUS.	MELOLONTHIDÆ.
Labrum distinct, transverse ovate.	Supposed labrum bilobed.	Labrum distinct, bilobed.
Mandibles without a molar plate, or strong oblique ridges beneath.	Mandibles without a molar plate, but with a few strong oblique ridges beneath.	Mandibles with a molar plate, but without strong oblique ridges beneath.
Maxillæ with the outer lobe membranous, ciliated; inner lobe toothed and horny.	Maxillæ with outer lobe horny, toothed; inner lobe small, membranous.	Maxillæ with outer lobe horny, toothed.
Anterior tibiæ not notched.	Anterior tibiæ notched.	Anterior tibiæ notched.
Podex covered.	Podex uncovered.	Podex uncovered.
Longitudinal veins of wings at unequal distances apart.	Longitudinal veins of wings at nearly equal distances apart.	Longitudinal veins of wings at nearly equal distances apart.

It further appears to me that the nearest approach to this genus is made by some of the numerous small *Aphodius*-like *Melolonthidæ* of New Holland.

(Since the above was written, I have found that Latreille states, "Je soupçonne que les *Mæchidies*, à raison de la forme et de l'échancrure du labre et de quelques autres caractères, avoisinent les *Mélolonthes*.")

Sp. 1. *Mæchidius Kirbianus*, W.

M. oblongus, obscurus, scaber, subcinereus; elytris punctis papillatis seriatim ordinatis seriebus plurimis; thoracis angulis posticis vix obtusangulis, lateribus rotundatis, dorso utrinque tri-impresso.

Long. corp. lin. ?

Habitat in Nova Hollandia.

In Mus. Britann.

Syn. *Trox spurius*, Kirby, loc. cit. Mac L. &c. (*Mæch. spur.*)

In size this species is nearly similar to *M. Macleayanus*, but

the head and thorax are considerably broader, as are also the legs. The upper surface of the body is opaque.

The sides of the thorax are regularly rounded, and slightly serrulate; the posterior angles are not emarginate, but are very obsoletely obtusangular; they are marked on each side with several transverse impressions; the anterior tibiæ have three obtuse teeth on the outside, the first of which is near the middle of the tibiæ; the lobe of the hind tibiæ is very prominent, and truncate at the tip; the antennæ are castaneous brown.

Mr. Kirby's description of the impressions on the body is as follows: "*Corpus punctis pupillatis et centro oblongo eminentibus pallidis, subcinereum et scabrum.*"

These punctures on the elytra (of which there are about eighteen striæ in each) are nearly round and cinereous, each with a raised oblong centre, the space between each puncture being also elevated.

The specific name of *spurius* being applicable to the insect so long only as it remained in the genus *Trox*, to which it does not belong, I have ventured, in its stead, to designate it with the name of the venerable author by whom it was first made known.

Sp. 2. *Mæchidius Hopianus*, W. (Pl. V. fig. 3.)

M. oblongus, scaber, nigricans, opacus, setulis luteis (præsertim thorace) subcinereus; thoracis angulis posticis valde emarginatis.

Long. corp. lin. $5\frac{1}{2}$.

Habitat in Nova Hollandia? In Mus. D. Hope.

Oblongus, depressus, opacus; elytris vix thorace latioribus, lateribus fere parallelis. Caput transversum, punctatum, setosum, margine reflexo, antico parum emarginato, laterali vix bisinuato. Antennæ castaneæ. Thorax margine antico valde emarginato, lateribus rotundatis, angulis posticis valde emarginato-excisus, dorsi medio parum impresso, lateribus haud transverse impressis; tuberculis minutis, transverso-curvatis, elevatis, nitidis, scaber. Elytra oblonga; thorace parum latiora, lateribus fere parallelis, opaca, fusca; singulo striis 18 et punctis (circiter 40) ovatis parum impressis formatis, spatiis inter puncta elevatis nitidis; setulaque brevi crassa, lutea, decumbenti, in singulo puncto posita. Pedes nigricantes.

[Fig. 3 a, underside of head; 3 b, labrum; 3 c and 3 d, mandible in different positions.]

Sp. 3. *Mæchidius Mellianus*, W.

M. angustior, nigricans, capite anticè vix emarginato; thoracis lateribus rotundatis, angulis posticis extus prominentibus; tibiis anticis obtusè 3-dentatis.

Long. corp. lin. $4\frac{1}{2}$.

Habitat in Nova Hollandia. In Mus. D. Melly.

Præcedentibus minor, angustior et magis nigricans, valde punctatus, punctis rotundatis et setigeris. Caput margine antico fere recto, lateribus supra basin antennarum paullo dilatatis. Prothorax lateribus rotundatis, crenulatis; angulis posticis extus in spinam brevem crassam obtusam productis. Elytra oblonga, postice parum latiora, singulo seriebus 18 e punctis ovalibus setigeris longitudinaliter positis; setis brevibus. Tibiæ anticæ angustiores, obtuse 3-dentatæ, dente intermedio reliquis haud majori. Tibiæ posticæ apice haud dilatatæ, angulo externo longitudinaliter producto, truncato.

Sp. 4. *Mæchidius Macleayanus*, W.

Piceus, nitidus, punctatus, longius setosus; elytris oblongo-ovatis, depressis; thorace lateribus rotundatis, angulis posticis acutis.

Long. corp. lin. 5.

Habitat in Nova Hollandia. In Mus. nostr.

Præcedenti brevior et magis convexus. Caput angustius, rufopiceum, punctatum, setosum, margine reflexo, antico acute emarginato, lateralibus magis sinuatis. Thorax subconvexus, nitidus, elytris evidenter angustior, lateribus rotundatis, angulis posticis acutis, punctis magnis numerosis impressis, singulo setam gracilem longiorem emittenti. Elytra oblongo-ovata, subdepressa, nitida, striato-punctata (singulo striis circiter 20 e punctis ovatis impressis setigeris formatis). Pedes picei, nitidi, longius setosi; tibiis anticis 3-dentatis, dentibus acutis, intermedio majori; tibiis posticis ad apicem extus longitudinaliter productis truncatis.

Sp. 5. *Mæchidius Raddonanus*, Westw.

Piceus, opacus, punctatus, brevissime setosus, capitis margine antico profunde et acute emarginato, thoracis lateribus rotundatis, angulis posticis acutis.

Long. corp. lin. $4\frac{1}{2}$.

Habitat Port Philip, Australasia. (In Mus. D. Raddon.)

Præcedenti minor et pro magnitudine latior, opacus, breviter setosus, valde punctatus, punctis rotundatis. Caput marginibus elevatis, margine antico acute et profunde emarginato, ante oculos parum dilatato. Prothorax lateribus rotundatis (postice magis rectis quam in præcedente), angulis posticis acutis. Elytra rufo-picea, opaca, singulo striis 18 et punctis minutis subovalibus ornatis, puncto singulo in medio elevato et seta brevi (puncto haud longiori) decumbenti instructo. Pedes ut in præcedente.

Sp. 6. *Mæchidius rufus*, Hope, MSS.

Rufo-castaneus, nitidus, punctatus, tenue setosus, capite lato, marginibus elevatis, tibiis anticis obtuse 2-dentatis, femoribus posticis in medio dilatatis, tarsorum articuloque basali posticorum longe penicillato.

Long. corp. lin. $2\frac{1}{2}$.

Habitat Port Essington, Australasia Septentrionali. In Mus. Hope.

Totus rufo-castaneus (oculis nigris exceptis), nitidus, punctatus. Caput latum, margine antico elevato, in medio parum emarginato. Palpi maxillares quam in præcedentibus longiores articulo ultimo curvato; mentum oblongum, utrinque versus basin setam longissimam emittens. Prothorax lateribus rotundatis, angulis posticis vix acutis nec prominulis. Elytra prothorace vix latiora, singulo (circiter 18) punctato-striato, striis lateralibus confusis; discoidalibus per paria currentibus, spatiis inter paria parum elevatis vel costatis, punctis elytrorum minoribus quam capitis et prothoracis; ovalibus singulo setam minutam emittente. Apex elytrorum et podex setis latis pallidis vel squamis obsiti. Tibiæ anticae ad apicem obtuse bidentatae; posticae in medio marginis interni angulariter dilatatae, apice bicalcaratae. Tarsi postici articulo basali longo, extus penicillo longo setarum divergentium instructo et subtus setoso.

Obs. This species differs from all the preceding in the small size, red colour and curious structure of the hind feet.

[Fig. 4 *a*, mandible; 4 *b*, maxilla; 4 *c*, mentum and labial palpi; 4 *d*, antenna; 4 *e*, fore tibia; 4 *f*, hind tibia and tarsus.]

[P. S. I find this genus in the French Cabinets, under the name of *Geobatus*, placed amongst the *Melolonthidæ*.]